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Abstract

Introduction and Aims: The present study aims to investigate the effects of an intradialytic program of strength exercises in patients with Chronic Kidney Disease. Individuals who undergo hemodialysis are faced with multiple catabolic processes, including protein and energy level, characterized by loss of muscle mass and decreased visceral proteins. Its pathophysiology becomes so complex, multifactorial and few explanations are encountered. However, it is clear that irregularities in muscle function, exercise performance and physical activity initiated in the early stages of CKD will progressively worsening.

Methods: Of the 45 participants, 29 were randomly chosen to join the training group (TG) and 16 control group (CG). The TG conducted a program of strength training during hemodialysis sessions for 8 weeks, 3 times per week, while the CG remained with the usual routine. At the beginning of the program was conducted an assessment period: the Sit-to-Stand Test, the Up-and-Go Test, the Hand Grip Test, the Pinch Gauge[®] and anthropometric and laboratory tests, culminating in the application of SF-36 version 2. We repeated this evaluation procedure after completion of training protocol.

Results: Taking into account the results obtained, the TG significantly increased the number of repetitions of the Sit-to-Stand Test ($12,22 \pm 5,37$ initials; $15,4 \pm 3,27$ final), and improved runtime Up-and-Go Test ($16,74 \pm 17,38s$ initials; $11,33 \pm 6,26s$ end). Regarding the right handgrip, this group improved significantly ($18,79 \pm 11,32Kg/f$ initials; $21,92 \pm 11,73Kg/f$ end), not even checking the left side ($18,5 \pm 11,60Kg/f$ initials; $18,46 \pm 11,63Kg/f$ final). As for digital right grip strength ($5,68 \pm 2,14Kg/f$ initial; $6,04 \pm 2,88Kg/f$ end) and left ($5,21 \pm 2,53Kg/f$ initial; $4,88 \pm 2,31Kg/f$ end) there is the same situation as in handgrip strength. After completion of training program, in TG the physical component of the SF-36 (version 2) improved significantly ($34,178 \pm 10,83$ initials; final $41,52 \pm 8,14$), and the same happened with the mental component ($51,43 \pm 7,33$ initial; $52,74 \pm 8,47$ final).

Conclusions: It's visible an increase in the number of repetitions of the Sit-to-Stand Test in GT, declaring statistically significant changes. Through these results, it can be said that the program was beneficial, improving the ability of participants to perform a higher number of repetitions in comparison with the results obtained by many authors; It's clear that the GT had a reduction in the time of execution of the up and go test, with significant statistical differences. These values indicate an improvement in the physical condition of the patients. These results suggest that a program of strength training intradialytic improves functional capacity and quality of life in this debilitated population.

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